



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,642	03/11/2002	Martin Hartung	1860/50916	9210

23911 7590 04/06/2004

CROWELL & MORING LLP  
INTELLECTUAL PROPERTY GROUP  
P.O. BOX 14300  
WASHINGTON, DC 20044-4300

EXAMINER

LEWIS, RALPH A

ART UNIT	PAPER NUMBER
----------	--------------

3732

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/070,642

Applicant(s)

HARTUNG, MARTIN

Examiner

Ralph A. Lewis

Art Unit

3732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 18-25 and 27-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-25, 27-29 and 33-40 is/are rejected.
- 7) ☒ Claim(s) 30-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**Rejections based on 35 U.S.C. 112, second paragraph**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 36, it is unclear what objectively ascertainable structural limitations applicant is intending to impose on the claimed apparatus with a limitation directed solely to its intended use.

**Rejections based on Prior Art**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

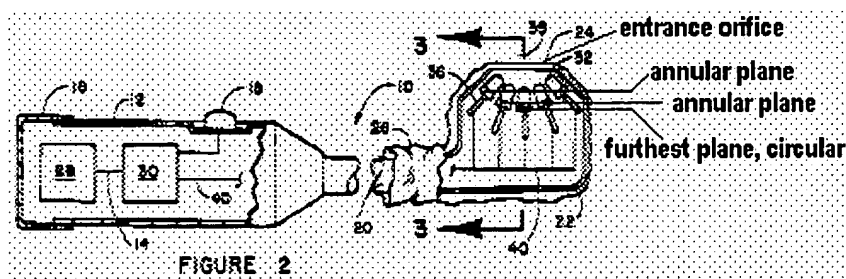
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-25, 28, 29 and 33-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osterwalder et al (US 6,102,696) in view of Kovac et al (6,200,134).

Osterwalder et al discloses an irradiation unit for curing dental resins having a light-emitting unit comprised of a plurality of light emitting elements 32. It is presumed that the Osterwalder et al conventional packaged LEDs have the claimed "light cone", "aperture" and "optical axis," as do applicant's conventionally packaged LEDs. The Osterwalder et al LEDs are set at an angle of inclination and arranged in parallel planes as illustrated in the reproduced Figure 2 of Osterwalder et al.



Osterwalder et al lacks the claimed light-conducting unit and the claimed thermal connection between the light emitting elements and the housing. Kovac et al, however, for a similar dental resin curing device teach that it is desirable to provide for a light conducting unit 22 for conducting light from LEDs 32 to the desired place in the patient's

mouth. To have provided a light conducting unit for the Osterwalder et al device so that the light could be more easily directed to the desired spot in the patient's mouth where resin is to be cured as is taught by Kovac et al would have been obvious to one of ordinary skill in the art. In regard to the "thermally connected" limitation Kovac et al teaches providing a heat sink 46, 64 attached with the housing 16 for helping to conduct heat away from LED's, merely providing the Osterwalder et al LED's 32 with a conventional heat sink in order to draw heat away from the LEDs and prevent them from over heating as is taught by Kovac et al would have been obvious to one of ordinary skill in the art.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kovac et al (6,200,134).

Kovac et al disclose an irradiation unit in Figure 1 having a light conducting unit 22, LED light-emitting unit 30 with light beams 34 directed on the end of light conducting unit 22. The light emitting elements are all mounted in a plane to planar holder 40 at different angles of inclination so as to direct light at the end of light conducting member 22. The Figure 1 embodiment of Kovac et al meets all the limitations of the present claim with the exception of the "thermally connected" limitation. Kovac et al, however, teach for other embodiments that it is often desirable to provide for a heat sink to prevent the LEDs from over heating. To have provided a heat sink at 40 in the Figure 1 device in order to keep the LED's from over heating as taught in the other embodiments of Kovac would have been obvious to one of ordinary skill in the art.

### **Response to Applicant's Remarks**

Applicant suggests that Osterwalder et al fails to disclose that "the aperture, the distance and the angle of inclination [of the light emitting element] are selected such that the light beam illuminates an area that corresponds substantially to the surface of the entrance aperture." The examiner notes that the Osterwalder et al LEDs are illustrated as being angled so as to direct light toward the aperture and it was presumed that they were all properly aimed, however, it is noted that Kovac explicitly teaches that LED's are to be angled so that they form a beam 34 that is sized to illuminate the aperture of the light conducting element 22 (note column 6, lines 15-21).

### **Allowable Subject Matter**


Claims 30-32 are objected to and would be allowable if rewritten in independent form to include all of the limitations of the claims from which they depend.

### **Prior Art**

Kennedy et al (US 5,634,711) is made of record.

Any inquiry concerning this communication should be directed to **Ralph Lewis** at telephone number **(703) 308-0770**. Fax (703) 872-9306. The examiner works a compressed work schedule and is unavailable every other Friday. The examiner's supervisor, Kevin Shaver, can be reached at (703) 308-2582.

R.Lewis  
April 1, 2004

  
Ralph A. Lewis  
Primary Examiner  
Au 3732